Event ID: 1265215
Event Started: 2/7/2009 4:00:00 PM

Please stand by for realtime captions.
>> Mike Shelby says: Good morning. This event will most likely only last one hour. If the conference call stop around 12:00 EST feel free to end this event. -Mike Shelby
>>
>> Captioner says: Great, Mike, thanks for letting me know!
>>
>> Mike Shelby says: Are you captioning our event this afternoon beginning at 1:00 EST? If so it also will last only one hour.
>>
>> Captioner says: No, I'm not, but I will sure let them know, okay?
>>
>> Mike Shelby says: Sorry, it begins at 2:00 EST. It will still last approx 1 hour.
>>
>> Captioner says: Okay, great!
>>

>>> Well, I wish that we were a profiting organization because this is the kind of problem every organization with love to have. If they give for coming out, we really appreciate it.

>>> Do you want to get a good site?
>> Yes.
>> We're going to start a vote early because it is the full house. And the first thing is, is there anybody that needs the sign language? Because we can come up if we need that. Really it is nice to have these centers signers here today. They put in all the punctuation marks for us. It takes a little longer but we're happy to have it. But like to welcome you to Treasures Theater. It is actually the teetoo Science Center but we have turned it into [indiscernible] kind of place. We probably have had about a dozen people over today's to transform it into this and we are glad to have been here and Sherry this with you. My name is [indiscernible] and I work with NOAA Fisheries and [speaker/audio faint and unclear] this is all a part of it. And what we're trying to do is educate you about the kind of work that NOAA does [indiscernible] every single day. Did you fly an airplane, drive a car, ride in a boat, we touch your life every single day. For there any NOAA in place in here or families? So you know a little bit about that kind of thing but if you have been initiated, it will learn about a lot today in the short time we are together.

>>> NOAA Heritage Week is an annual [indiscernible] run back-and-forth doing tears and things like that to make it comfortable for you.

>>> NOAA Harry Tisch week is an annual event that we break out either [indiscernible] build and have a Award winning films, and that title is thrown around a lot but we ought back sometimes [speaker/audio faint and unclear]. These are just some of the aborts that NOAA has won with their films and you will see some of those here today.

>>> NOAA Heritage Week takes place taboret sixth through 14th, and you're here on Saturday but the grand opening is Monday and you are invited back again to hear from our NOAA leadership who will be here, and our guest speakers and you can always be a part of that if you like.

>>> Here is where we will share the award winning films I've mentioned. We have current films, we have films that are maybe 10 or 15 years old, we have films that are 30 and 40 years old. And I am excited about those. And I've met some of you have already seen those because [speaker/audio faint and unclear] Si Those [indiscernible] that have at our previous [indiscernible] for NOAA on [indiscernible] television.

>>> This afternoon at 2:00, the rebound rescue 911, Monday [indiscernible] at 11:30 a.m. is our kickoff. And the [indiscernible] meteorologist with the year and [speaker/audio faint and unclear]. Could I get some water.

>>> [speaker/audio faint and unclear] read across the hall. There they are, thank you so much. Excuse me, ladies and gentlemen.
>> Thank you. We are also one to have Ken Graham, are meteorologist detergent Orleans speak on the human side of the Hurricanes and how it impacted the folks down there. And I also have grantee Tebeest, and he is our commander and he has eight years of service and he will be her to talk as well.

>>> Before we have our guest speakers, we would like two show you a couple of films, and [indiscernible] ladies and gentlemen. Please enjoy and I am going to have some more water. Thank you very much.

>>> [music playing]

>>> The National atmospheric and [indiscernible] as a Shearson. With roots stretching back to the early 1800's.

>>> In 1970, these two missions came together to form one overall taping chip, NOAA. Today, NOAA 's work reaches from the bottom of the sea to the surface of the sun, a and [indiscernible] of their daily lives.

>>> [music playing]

>>> We divide the ocean into many parts. Atlantic, Pacific, Indian, arctic. [indiscernible] The same is true of NOAA. Together with the thousands of people that work at NOAA [speaker/audio faint and unclear]. They are joining forces to save lives, save our country and protect our opera. From whether two [indiscernible]. Each year [indiscernible]. Together they make one united.

>>> [music playing]
>> So that is a little bit about NOAA, and I know a little bit about that bottled water, I think am starting to lose my voice. But anyway, we'll have some time for questions and answers afterwards, so as things come up, is still free to ask. It's still [indiscernible] if it gets warm, but as so and will try to get a cooldown of a bit and get some doors open.

>>> By the way, I think I went over a little bit about Veronica, but later on today, I will go over the different events coming up in it so you can hang around a comeback for that. But the big one this afternoon will be a green metal rescue 911. You'll really enjoy that. On Monday nine teeeleven 30:00 a.m., that is our kickoff and [indiscernible] will be there at that time. What right now what what to do is bring up Ken Graham, the meteorologist in charge in your lens. Right in the heart of [indiscernible]. He is first 15 years where with the NOAA and previously in TV weather. But he has experienced hurricanes, tornadoes, floods, right from ground zero. He was in New Orleans after Hurricane Katrina, and he has done countless surveys of tornadoes and watched whether billons and the deep floodwaters and you will really enjoy this, not in a morbid sense but just to see what really occurred in New Orleans.

>>> Ken is actively engaged in NOAA weather radio and he is here to talk about his experiences to the extreme from the ground and how it really it affects the people.

>>> Ladies and gentlemen, please welcome Ken Graham. [APPLAUSE]
>> Thank you very much, I appreciate that introduction, and you know, being [indiscernible] NOAA employee I work for the National Weather Service down and more guns, and every time I watch that video I am so proud to be a part of NOAA and [indiscernible] component and we do an amazing number of thing. You will see the films J. the wide range of things we do, so I hope you all enjoy this. I am here from Borland's, I am the chief meteorologist Don there adequate through Katrina, but so much to speak on science or meteorology won a one or anything like that, but talk about the personal aspect of what we do and the local weather offices are right there in the heat of the battle. We live in the communities we serve and we're right there interacted with the public and their families there [indiscernible] so I wanted to share some things with you today.

>>> We are busy. If you look at our country, we get a lot of severe weather as you know, and depending on where you are from around the station, your used some different things from tornadoes to beyond. In a typical year, but it said and hurricanes, thousands of tornadoes, 5,000 flights, 10,000 thunderstorms, a 25 million of lightning strikes -- and sure you all know safety when it comes to light in. But for those of you later, we have giveaways. We will have questions and address of some NOAA weather radios, so if we have some folks that can answer some questions today. That is the best way to keep some attention of everyone, say there is prices. So we will have that later.

>>> And something else that NOAA does that is important to the nation, 35,000 fires a year. And we support the fire effort, we supports several federal agencies and we send people on the scene to support those buyer workers, whether it is a chemical spill or anything like that, [music playing] is right there to support them. Portable equipment that is out there. And [indiscernible] to this country.

>>> I was told [indiscernible] [indiscernible] human aspect. And I want to go back to come and go back 16 years with me, can you do that? Kind of close your eyes and go back 16 years. Back then I did television weather, so if I start doing something like this, just distract me or through some little airplanes at me. That is his job over there. You go back and [indiscernible] of want two pay the full picture. So [indiscernible] it changes you.

>>> I think most people have. I wanted to share one of mine. But [indiscernible] the weather and going back To School and teaching physics, doing some TV weather, and things are great. I got my master's degree, I was 23 years old, Kenya picture it quacks like was good. About a lot of myself. I was 23 years old, graduate school, a TV weather, I was all that and a bag of popcorn. So we are on the air and which is something new. And we redoing a 22 event and this was 16 years ago and we didn't have a lot of stations going live. There were just on the ground. [indiscernible] tornado for the weather service, we went ahead and let live on the air and [indiscernible] talking about tornadoes and doing right thing slide on the air and all of a sudden -- and before I go on with this story, a meteorologist Joe Kleine at the station, [speaker/audio faint and unclear] because every TV station networks for as [indiscernible]. The reporters, news director, that sort of thing. But during this event, live on the air, all of a sudden on the chrome [indiscernible] behind me, the Big Blue thing with that was behind me, I here, Ken, you have to take this call. And I'm like, and live. And all of a sudden, it keeps happening. Ken, you have to take this call. And so I know something is up. In so I took the call. I said hello, this is Ken.

>>> Yes, I am in my trailer, I family is here, and I'm looking around and hearing noises and I don't know what to do. And so I said, what is your location? Where exactly do you live? And with the that the radar. With the debt it together and put it on the screen so the person connection see it on the screen as we were talking. That I said, you are in the path of that tornado. Okay, so here I am back on the air like smiling, and about a half-hour later, it was a repeat. Ken, Kenya did this on call? On lives. So I got the phone call and it was the same gentleman and he said, we got out of that mobile home and now it is gone.

>>> I was never the same after that and it wasn't [indiscernible] on TV and I joined NOAA because of that right here. Because of the impact that NOAA has on people in this country and the opportunity to [indiscernible] out. Me being in the local office [indiscernible] tornado warnings and flood warnings and the things you see on the screen.

>>> I wanted to show that because of the awesome power of tornado. Has anyone ever seen this before? This was taken from a security camera in Huntsville Alabama as a week tornado went through the parking lot. A weak tornado. [speaker/audio faint and unclear] [laughter]

>>> But this was a weak tornado to give you an idea. So [indiscernible] [indiscernible] actions at home [speaker/audio faint and unclear]. I had asked the same question in norland, and you think that there would be printed to the kind of thing, but how many of you have an actual family plan for a tornado? And I have proof. There was a time in Fort Worth Texas when I was working for NOAA there, we got [speaker/audio faint and unclear]. And by the way, I was replacing Mike fetters in Fort worth every two years.

>>> And here is the question, what caused my debtors to be destroyed? I heard tornadoes, no. I heard Hale, I heard winter. Every three years I would replace Mike fetters so hail detecting it up. -- replace my gutter's so hail could tear them up. That right there is a genuine NOAA weather radio.
>> You should autograph it.
>> We could do that.
>> And this wasn't [indiscernible] where I was off ships so I went home. And it was rare for me to be home and actually [speaker/audio faint and unclear] had a computer screen and [indiscernible] going on. So I was home for this. And on -- and a ham radio operator as well, and so the warning for going off and there was a tornado about 2 miles from my house. I have three kids now but before we had kids, we had to boxes back then, Oscar and Meyer. So I told my wife to take them and get in the closet because we were in trouble on this one. So she gets in the closet and of course being a meteorologist, I am aware [indiscernible] [speaker/audio faint and unclear] knows it was a tornado. But I started going towards the closet because it was getting closer, and the doorbell rings.

>>> Of all things, the doorbell rings. So I went to the door, opened up the door, and the neighbors. Ken, I think there is a tornado, what should we do? And I said, this is probably not the time to be thinking about this, come in. And so then they came in and it was my wife, the dogs, my neighbors and their kids in the closet. We have a walk-in closet. And believe it or not, it happened again. The other neighbor, he knew I was an urologist, and they were all in my closet. And so I asked the neighbor, and said, or is her husband?
>> I don't know.
>> What do you mean you don't know?
>> I don't know [indiscernible] he might still be outside the can for it. So I go outside and there he is waving at me saying, look over there. And so one thing I know is with the power of tornado, it ought mess with them. You to learn the safety factors up what you have to do.

>>> If you look at this map, this is a frequency of tornadoes by county from 1950 through 2007. The reservoir, tornado alleys, the little pockets of tornadoes. And if you notice their is little population buys. If you look at Maricopa County, many people are [speaker/audio faint and unclear] what some populations are, so right on the coast, a lot of those are from hurricanes. So you can see, this is your future.

>>> So prepared this is everything, okay, and visiting our Web site at NOAA.gov and about these. Learn about what to do if there is a flood. This was a such a mission in Greenberg that was hit by tornado, and how many of you remember that? Is destroyed most of the town. In Kansas. You probably remember that. It destroyed most of the town and I am looking [indiscernible] town was devastated almost like [indiscernible]. But I think what their real moral of the story is, they knew [indiscernible] and a can't stop the storms [indiscernible] in pact leads to lights and [indiscernible] these communities and NOAA worked in these committees to be prepared. The kids got out there and made the street signs and put those up. Does something to help the town out. [speaker/audio faint and unclear].

>>> I wanted to share this also, this is also a real story that happened last year. In Mississippi, I remembered that event I saw it on radar. It destroyed the school. But there is 2100 people at the school. And tournedos started popping up all over the state. The school that the warning 41 minutes before the tornado, that is one of the things we do as a local office. We [indiscernible] picking up the site variations and the greater [indiscernible] and getting the warnings out. That is one of the big jobs we do. And if we had 41 minutes to one the school. The school decided, we need to get all the kids into safe buildings. All of the kids were moved from the temporary buildings over to the main building and as a result, only three injuries occurred. And at the power of the tornado, this school bus was lifted off the ground and place on top of the building. They give you an idea of the power.

>>> The School got the information from that, so [indiscernible] Rio and [speaker/audio faint and unclear] a little bit ago, they got the warning and a big partnership with DHS with NOAA, we got together and got a NOAA with a real in every single school across the country. That was a huge accomplishment and [indiscernible] working harder and that helped saved kids' lives. [speaker/audio faint and unclear].

>>> I wanted you to see this. Talk some more about safety. This is an ATM security camera. This was in the Midwest, and a tornado. There was someone living in the house, and they lived. Because that the warning early. The tornado is coming in from left to the right and you see the lightning and the trees? See it getting darker? That is what power is, and that is why [indiscernible] is very serious and you should know what to do. And I have touched a lot on tornado so far and there are other things. There is [indiscernible] the floods. What do you do when you are driving down the road and you are really hungry? Cure driving down the road, on the underside, is your favorite food restaurant. It is right there. And it's got arches, and it has a Crown may be, I don't know what is on the other side. But there is a creek in between it and water is covering the road.

>>> Turnaround AT don't drive -- turn around don't drown. But how many times [indiscernible] our biggest challenges water. And you can see the power and we get the warning about but it is the water. You have to make a personal decision about going to that restaurant, I don't know what drives people to do it, but they do it all the time.

>>> We will talk a little bit about hurricanes, but that will be in our next talk. It is interesting that in 2008, some of the Hurricanes have [speaker/audio faint and unclear] every Buddy got out, everybody [indiscernible] things are fresh on your mind, don't forget things like that. But I think it was worth noting here [indiscernible] that in 1900, [indiscernible] hurricane hit. It was a very similar track to Hurricane Ike. Very similar track. And it is interesting to look at the damage. Fairly simple, it follows the peninsula and goes along the right, and [indiscernible] by the way, people say, [indiscernible] survived, but it may look livable but that house was bulldozed. This changes that have occurred in NOAA over the years, we had over 8,000 fatalities in 1900.

>>> In 1960 when a hurricane hit Corpus Christi, the forecast that morning was fair and humid. So what did they have to go on? We didn't have all this fancy stuff. And now we have superstars like you will hear flying into the hurricane. And then we have satellites keeping an eye on staff. We have radars, we have observation, we have all sorts of schools that are keeping an eye on things. It is no surprise. But there are still some [speaker/audio faint and unclear] around 20 people, maybe a little more than that. And [indiscernible] [speaker/audio faint and unclear]. And your eyes are not deceiving you. This is in Cuba, and they [indiscernible] six story building. And if you look at the Hurricanes, you always think of the wind, but it is the water that is the big problem. The search. It and we have a huge

[indiscernible] that I will show you coming up and I wish to you why. Even with Hurricane Ike, so people were out there being rescued despite warnings.

>>> This is where I am from. And that in a bowl. And this is kind of a cross-section of the city that I am working in. As you can see, you can see receive level is and some of the city life and the streets, you can see this cathedral and Bourbon Street on your left. And that is a big talent. That is a big challenge for us in the future, to the cat [indiscernible] and potential for sea level rises, but look at the wetland loss, it could be a major challenge for us going into the future to keep the water out and keep people state. Like I said, [speaker/audio faint and unclear]

>>> When you look at different situations, in looking hurricanes, and I will show you this again. Let's go back 21995. In 1995, it was before Katrina but it was a major flood. And I was working, and I was [indiscernible] in the deep water and on a community of snakes and alligators and all of that. All of that is real. It is not a movie. It was a scary situation. That is a lot of rain. And you could read at one or 2:00 in the morning that the lightning never stopped. I will never forget. It was just constant. It could actually read. It does get your book out there and bought back.

>>> But I want to take you into this little [indiscernible] office and NOAA 's mission and their call two find prayers. Their goal is to get warnings out for floods. Then it is amazing the emotions that take place in [indiscernible] at this point where if you get the warnings and did you do everything you can, but you still can't stop it. You have done everything you can, but it just can't stop it. This is a situation [indiscernible]. I got a flood and a lot of people lost their homes and belongings, so we keep up with some local churches and other meteorologist and we all went out and started delivering mattresses. We delivered most of them and we had once at left and I said, let's go here, it was kind of the project area and there's a lot of people struggling. I went to a place and I ask knocked on the door. And I and 6.5. When I knocked on the door and the door open, I had to look up. I said hi, I am Ken and that we are here to the brink mattresses. And picture this place, there is mud, bare concrete floors, the water mark was this high to where the water came up and he said, yes, this is where the water came in and this is where it went out the back. And all my clothes and everything went out that back door. I lost everything. But I laid the matches on and I realized that most guys, like me, are too long and wouldn't fit. But it was something to sleep on. And as I was leaving and asked if there was anything else he needed, and he said, yes. And he said I need a pair of shoes. And I said, you know what? We will go fine-tune some shoes. But cites the where? And he says, 19. [laughter] so if you go back 21995 with me, there is no Internet, okay, so funds were for the phones or for the rich, I didn't have one, and I called every where. Bye David C told of a supplier of Northridge and so I called this Nike place. And I told the whole story and he said, you know what, let me make a phone call, and they did, and we will FedEx a pair of 19 inches to you tomorrow. And so I got the package. They're size 19, remember, the biggest swoosh I have ever seen. And I took issue and took it to the guy. And one thing to talkative regret is that I hadn't wasted up. And I remember he started placing a tissues and it seemed like an eternity. I was there -- I thought I would be there for hours. And he placed them up and put them on and he gave them the etiquette and said, thank you so much, and I said come up You're welcome.

>>> These are the stories and it is humanized. When the NOAA works with the local communities, it take all of these kids the computers and satellites and everything but what it boils down to is we're serving the local people like that gentleman. And that gives you a taste of what NOAA does. I told you about surge, power and water [indiscernible] estimated. [speaker/audio faint and unclear] muddy water that all knocked off of your feet. And [indiscernible] start looking in your car. Water is powerful. Water from Katrina moved in and moved in a mile plus, and about a half mile [indiscernible] concrete [speaker/audio faint and unclear]. These are all Katrina pictures. We were riding around after Katrina, and you can see some of the sites.

>>> And one thing I wanted to share this with you, because we had a lot of memories. And we can't see things. You ever notice certain smells, the Udall forget, I don't know what it is with the human brain and smell. The rest of my life, everywhere you went smelt like Pine Sol. Because millions of trees were destroyed with Katrina. Everywhere you went smell like pine, the strong order odor of pine.

>>> And this is our office, so you can come see us. Ask for Ken and we will have a pair of Nike shoes for you. But this is right after, some of the trailers on the left-hand side, why are those there? Because [indiscernible] people in the communities, even after [indiscernible] lost their homes and their things and then they sat there and are still working [indiscernible] [speaker/audio faint and unclear]. And that was me pretending to be something I am not, a meteorologist shouldn't be doing this, but after Katrina, are parking lot was virtually to turned into a savings center. Construction must devastated and returned to refuel and [indiscernible] to our office. We did quite a bit. So I just wanted to share. [indiscernible] asked to do and this is [indiscernible] aspect of this, and [indiscernible] question? Ready? You are on a ball field playing soccer, plane Thursday -- what you guys play validates cracks basketball.
>> Okay. I'm glad you didn't say Wii. So you do get outside. So you hear thunder and lightning, and you see the light in getting closer. What do you do? The go around and see what you do.

>>> [speaker/audio faint and unclear]
>> I like it. Did you hear that cracks he said, don't go under a tree. Why is that?
>> That is one reason it can do that, it could fall on your head. The other reason is lightning is pretty lazy and it will strike the tallest object, as they want two stay away from tall things. And by the way, whenever there is lightning, [speaker/audio faint and unclear]. So there is all sorts of factors with that. And [indiscernible] [speaker/audio faint and unclear] with lightning, it got to get out of there. [speaker/audio faint and unclear] cars are pretty safe, [indiscernible] convertible, and [indiscernible] unsafe now, and it is not good, keep it or [indiscernible]. What you think? Lay down. Let's talk about that for a second. When lightning hits the ground, it spreads out really quickly. So laying down is not good. The squad down.
>> [speaker/audio faint and unclear] by the way. [laughter] but that is a big one here. It is what down, there it is less surface area and it is better.
>> That is an interesting trivia question. If you are a tree, are you more likely to survive a lightning strike if you are wet from the rain, or dry?
>> What did you think?
>> Directory is correct, why?
>> Because [speaker/audio faint and unclear].
>> Exactly. Because of lightning will go on the surface of the tree if it is outside, and the court will survive. But it directory, it will go down the middle and [indiscernible] and the tree will explode.

>>> Should we do one more? Two a topic.

>>> Hurricanes. This is for the kid's only. Sorry adults. But you could go to York neighboring consumer store and get one of these things. Kids, why do hurricanes have eyes?
>> [speaker/audio faint and unclear]
>> That is good. You are really close. And at that this is what you're trying to say. When you are on the mayor ground and it's been steadfast, what happens to you? Do you fly in or out. Okay, all of spinning around, and put you on -- what is going to happen to you?
>> You are one to fly off and hit his wings. It went to fly off of that and hit something, because that is the force, said tropical forests, the Maurice being -- centrifugal force. Let me tell you something, I had a thousand kids at a school windup and [indiscernible] in their eyes and a little girl, she was so skewed, a broader up to the microphone and asked her why hurricanes have eyes, and she said, so they can see where they are going. [laughter]

>>> That concludes my portion of it, and I hope you enjoyed it and we will be around for questions and answers did you have any. [APPLAUSE]

>>> [speaker/audio faint and unclear] [indiscernible] a tear. To show you another dimension of what NOAA does for you on your behalf, [indiscernible] the weather. But close your eyes for a second and think back to that [indiscernible] would have all that water. But that looked like. The real yucky water. Would you eat fish or shrimp out of that water after the hurricane? Well, that was a big problem. A lot of people were saying, would not want to eat Gulf shrimp or fish. Within days of the end of Hurricane Katrina, NOAA scientist or in that water making sure that those things were safe to eat. So we ran instrumental in helping the industry of shrimp and fishing industry in the gulf.

>>> Also, our surveyors, our coast surveyors or in the area credit quickly itself, [indiscernible] that area so the ships could get in and out after that hurricane. So just more ways that NOAA really affects you every single day with what it called Science, servers and storage chip. And [indiscernible] because I do want to introduce commander Randy Dean, and I don't want to miss it were here because he is very interesting as well. Flying in hurricanes. So Commander Randy Tebeest is a NOAA a theater here with 18 years of service to a back country. He is known for 14 years of aviation, flying several of NOAA 's aircraft, including the Lockheed P3. Canada has fallen in many hurricanes, tropical storms including Hurricane Katrina, retest and Wilma. He has 155 hurricane eyeball penetrations and he will explain that. Commander Tebeest is currently assigned to NOAA in the Marine and aviation operations as an [indiscernible] to the director. But before we have him come up here, we would like to see show you three short films. Ladies and gentlemen, is attention to the screen please.

>>> [music playing]

>>> [video playing]
>> [speaker/audio faint and unclear] open oceans, coastal weather and Arctic ice. The specialized aircraft maintained by JOC is in support of NOAA 's said it miss missions in the protection and storage of the earth's environment.

>>> For that NOAA hurricane hunters, highly trained and specialized [indiscernible] died [indiscernible] propeller aircraft and [indiscernible] and jets into the heart of these storms come plunging their way and hauling through curtains of rain two help forecasters plot strength and direction of hurricanes approaching our coastal lines. The P3 powerful actor in the 60-degree greater amount on the plains [indiscernible] monitor the storm of instruments constantly update air pressure, temperature, pressure, wind speed, temperature and humidity. Scientistic point a wind instrument called a drop [indiscernible] and it's records [indiscernible] until it falls. Until it finally lands in the sea. All of this information is transmitted in realtime so the National Hurricane Center has the -- and that the National Center for Environmental Protection [indiscernible] hurricane and computer models analyze and the information is disseminated to the National service.

>>> Ladies and gentlemen, commander Randy Tebeest. [APPLAUSE]
>> Thank you folks for being a part of NOAA heritage week. My name is Randy Tebeest and I have been in the NOAA corporation for about 18 years. [indiscernible] aflame, and I know currently work for the Office of [indiscernible] aviation. Our job is to oversee R shift lead an hour or aircraft lead and bought back program. All those are ways to collect data that NOAA needs to do its mission and complete its objectives. I did start, I was a pilot before I came on with NOAA for a little bit but the first thing that I was assigned to was a key to research ship. It went from the Arctic Circle to the Antarctic circle. I had a dream of being a hurricane hunter and flying hurricane plants and [indiscernible] on a ship -- found myself on the ship in Antarctica.

>>> But what is sought in this to years on the ship crews was so amazing that to this day I would not about that experience. I don't think I would have gotten the opportunity to do a lot of things. I was on my way to the aviation side and started off flying some of the smaller aircraft it might have seen in that video, and that the deal is actually our record and video. And [indiscernible] very exciting recruiting P.O., but [indiscernible] the tabs in my 18 years is what I have experienced every day. Every day I get to do mission and I see things that [indiscernible] involved with this organization, and this agency.

>>> This is our hurricane hunter team. The high-flying [indiscernible] Gulfstream jet and then they W. P3 as our person is called. I am a P3 Pilate, and there is a model on the table here. I will stand up here because I am not as tall [indiscernible] that there. So I can see the White house actually, it is pretty huge.

>>> And we have things that I think some of the kids got the stickers, bet stickers. And this is an effort to really communicate with the aircraft and, we do once a year with the hurricane awareness [indiscernible] around the island or golf coast and east coast. And we try to bring awareness that may be affected by the coming hurricane stirring this season, so what we did was a partner with Jim Henson productions years ago and the nose art, but two P3 's out there, one is Ms. Piggy, and she got that name first because she was a little bit heavier than the other airplane. And the other one is to permit and then we got the G for and it has gone so. It has a radar. And so this is where we do a lot of our work. As you can see, these hurricanes are enormous. And we really -- actually it is kind of weird, but

[indiscernible] looked at all of these big storms, and they are devastating but when you're out on the ocean and get an opportunity to fly in them, this is the structure, the I of a category four or five storm is in a passive thing that not very many people actually get an opportunity to see. And it is always amazing to me as we punched through the eye wall and get into the IC [indiscernible] and you can see the sea below and see a stadium wall around you and it is makes you feel very small and is an amazing opportunity.

>>> And that is action that truckline for Katrina that you have seen a couple times already, it is an opportunity to fly well around the storm and it is really looking at the upper levels during current and steering winds that are driving the hurricane, and the yellow spots are ready -- which dropped those instruments called a drop sawn. And I heard a meteorologist say yesterday they are a camp in cam in a can. And gives us such a wealth of information. And as Kent was saying, we take the data and come up with the forecastle you guys can know where this hurricane is heading. But some of that we do have to go inside and get. To do that, we is that G four and the P3. The P3 Mexico into the eye. And we use that Drop Son. And it has it appears shock of parachute and drops about 2500 feet per minute and every second is falling, actually ever have second, temperature, humidity pressure, wind and wind direction. And it goes back into the computer and present it to the National Hurricane Center and we use all of that data, which sometimes, in a P3, is 500 points of data as it drops down. And these are these hurricane models that come up with the forecast the you see on the TV.

>>> And this is a P3 and there are some stats about it. The weight is 135,000 pounds when we take off at half of that is actually fuel. If that I have -- we have gone about 12 hours, and trips we use are usually nine or 10 our missions.

>>> And that is [indiscernible] into the park and if you think about a system [indiscernible] Hi compliant and that are lower altitude component P3 's. And as you can see, they're going right to the eye wall the yellow and red trucklines there. And then that G four track lines. Why do we need to do this? Well the population of the coastline is obviously going quite a bit, and I did and had heard that one statistic is 50 percent of our patients population lives within 50 miles up the coastline. So you can see the devastation. And as you heard -- what is turning?
>> Alex.
>> How old are you?
>> Ten.
>> Alex, do you recall what the most devastating thing about hurricanes, when you see those videos? Is it wind? Or is it water? Putty remember the storm surge? And how devastating the was.
>> That is the most devastating thing, the storm surge, and that is why all of these coastlines are so affected by the storms. And so [indiscernible] on our flight suit. [indiscernible] can fly hurricanes. So put on your flight jacket. [laughter]

>>> And right there is what we're talking about, the storm surge. And this is the normal high tide on the coastline and with a 50-foot search, you can see how that affects the house on the coastline there. This is an interesting before and after shot. This was Hurricane Floyd, I don't know if some of you remember Hurricane Floyd, that was 1989. [indiscernible] one point in North Carolina as a category four storm, but this is after. And generally [indiscernible] storm surge after that. And here is another case water carrying away a house. And then, this was actually from some of those which took after Hurricane Ike this past year. And this is where I had my epiphanies as Ken was talking about it. I had the Pitney every year, because I think I have a great job and I love it and I love to go in those large storms because like I said before, they are so dramatic when you get inside. And that I see these pictures and it really hits home. When you go in and get all the information you can afford meteorologist for the forecast, but we can't do think about where it goes. All you can do is get the word out and have people prepare. So as you look closely along the coastline there, that last -- that first row there, you can see some foundations were there were houses but are no longer houses. And that is from a storm surge. That is just a graph of how good we are getting in terms of the forecasting the track on. The earlier years on top and as you get down through 99, the last data point we have, we're doing pretty well in terms of the error in miles, but our job is to continue to do this and get better at it so we can inform the right people to evacuate. And that is the most important thing, right, Ken, is to evacuate and get out of town when a hurricane is coming.

>>> That is a picture of what the instrument that is floating around helps us do, and this is hurricane Katrina. And the black line is the actual track line. The Green Line is the Model that they came up with. The forecast they came up with Drop Sons. And then they took that information out of the Model and they got the red line, so you can see that information is so valuable and white is so important to get it.

>>> And this is obviously -- we want to avoid having this in the wrong place because it is a pain, for one, but also an expensive thing to do, evacuate people from the coastline. It is very expensive for all services and also for the people that have to do it, so we all want to have to evacuate unnecessarily.

>>> And here are a couple of slides and show you the high seas from my office window. This is actually a picture of the radar that have on the plane, and that is [indiscernible] a truck plant that is her Hurricane Floyd from 1999. We chose this one because it is a great shot of a circular highwall that is pretty thick. You can see the path of our aircraft, and in this particular storm, we lost an engine. One of four engines, write about the 190-point. Direction. So that was a very big storm. They lost the engine at the very worst possible time, which accounted for the swirling inside the eye. And what they're trying to do is they're trying to get some data but they realized they had to go home. They got in the eye and circled around and tried to climb up to a higher level, and then find that we point and ended up exiting out that in your area there and heading home.

>>> It can fly on three engines, but it'll stick around. We go home.

>>> And that is really why we choose that aircraft, it has a lot of resiliency and rigidity and we count on that a lot.

>>> And this is what we like to see -- don't like to see. It is devastating. This was hurricane Katrina. And we had the opportunity to fly several missions on Hurricane Katrina, and remember it didn't add up on shore until it was a category three. Can they don't typically stay at a category five for very long, because it can't exist in the state very long. So hurricanes typically regenerate themselves and go up and down a little bit. But this was when it was a category five.

>>> That is sometimes what you would see when you look down into the eye, you see a picture of the surface of the water. At the term hurricane hunting is a little bit of a misnomer. Way back when, they have no idea that a hurricane was coming and their forecast for the day was humid. It did indicate that -- didn't indicate a hurricane. And then in the 50's when I started using an airplane, they didn't have the satellite covers. So they really did have to go out and hunt for the hurricane. Now we know with our instrumentation today. The hunting part is when we get into the eye, we have to find that low pressure point in the eye. And it is never really expected to be. It is never in the geographic center of the high, it is somewhere in that clear part that we have defined the instrumentation for that. With that low pressure and zero Wednesday. And you can look down at the surface. And that is an indicator of where the eye is.

>>> This is little bit of the other whether it stuffed with live with the hurricane hunters off season. This is [indiscernible] in the Midwest. It was a very fast-moving line of thunderstorms that typically have lead in the evening, and it moves through the Plains states through the night. And it can be very damaging, it is a swarm of tornadoes, and this is typically are track line or something like that. Right about there is where you expect a tornado to be spawned, and we had once when we were doing this, which typically don't fly fought back take off and there are is a bit more [indiscernible] than the hurricane eye wall, as we try two stay out of the actual inflexion if we can. But occasionally we have to pick our way through it. But one particular storm, I remember in Nebraska, and we flew into the got beat up all night and struck by lightning, and we went in the next day and we had a former police kept a piece of Hale, a 6-pound piece of Hale, and we had been flying the night before. And we have done are picking through the bad stuff, and I got beat up all night, and then at the end of the day, we said, [indiscernible] air traffic control and said, we want to go south of this stuff. And they said, you have been flying in it all night, like you want to come home? And I said, this is our time, we want to take it easy a little bit. Try to do this safely and may get a lot of the permission we need. We have a lot a heritage with this. NOAA goes back to the early 60's in terms of using aircraft and hurricane of [indiscernible] to do research, and [indiscernible]. The situation to the right people say you could be informed on your end. And we get lightning strikes every now and then, and the airplane is not quite as bad as it can be. But on the ground -- we still try to fought back. And before, I was with NOAA as a pilot, and the first thing they say is stay as far away from whether as you can. And if there is a thunderstorm, the typically tell you to say 30 miles away. And the Christmas and I got was to fly into a snowstorm and study the amount of snowfall and building as on the wings, and I went and knocked on the nose and a piece of a sell-off. And as far as [indiscernible] [speaker/audio faint and unclear] I think I have been ruined for any other kind of flying in my life. But to really do anything but like any other kind of flying is fantastic and [indiscernible] like I said, it is a challenge to the states. We don't want two put ourselves into harm's way, but I have 125 penetrations third I walls, and [indiscernible] could say, honestly the most interesting thing I have done in my life is probably [indiscernible] the road over here. [laughter]

>>> That is it. Thank you and I will take any questions.
>> [speaker/audio faint and unclear] what does it feel like to be flying through [indiscernible]. [indiscernible] we know what to struck down and [indiscernible] Gallery and everything we have is strapped down. And we can be so [indiscernible] and typically though it were set it is [indiscernible] go back to that one picture of formation of a hurricane, you go some exterior grain [indiscernible] the [indiscernible] and throwing off bands of rain. Let me put this down so I'll lose it.

>>> But Intel [indiscernible] you get into an eye wall, which is [indiscernible] it has collected all [indiscernible] in that eye wall, so you have about a minute or two where you have to go through that. And that can be very violent at times. It is not like a house that is rigid and fixed to the ears, so you do have to [indiscernible] up and down and sideways, you can go with the start of a bit. It is typically [indiscernible] you can't reach your instruments, you have to take an average for a few seconds, and they want you to go up and down and all you can think about is who else is in that storm. There are usually two or three other airplanes, and they are there as well and it could conflict. It is two or three minutes where you are just doing our best to keep things level, and then you [indiscernible] actually inside the eye.

>>> Any other questions?
>> What happens if the ship falls over?
>> You mean if the airplane falls over? The ship? One of the NOAA ship.
>> Well, they designed them so they can stay upright pretty easily, they can go through a lot of weather. And so the design is so that the bottom stays in the water. It all want two tip over.
>> Here again, you have [indiscernible] questions for iteration [speaker/audio faint and unclear]. When you are out there, and you are in the eye, I know it takes delicate conditions two form a hurricane. Why can't we disrupt them? Or can we drop a sophisticated bomb in the ocean and disrupt that?
>> From my understanding, and I will give you a chance two try the demo in a second. But he saw how large those storms are across. Forty-five or 50,000 square feet. And [indiscernible] to think that any bomb would have the amount of energy to dissipate that is, from what I understand, is not reasonable or even realistic.
>> [speaker/audio faint and unclear]
>> A think that is a good answer. The other part of it is, the [indiscernible] has a much energy, what you have to do to disrupt them a whole new level of things. For example, fight back [indiscernible] the Gulf of Mexico. It puts an oil slick [indiscernible]. So there is always a nuclear weapon there. And that is probably the eye. And it will take a lot to disrupt them and bought back the hurricane.
>> [speaker/audio faint and unclear]
>> Would it be possible to get to the eye from above the clouds or above the storm?
>> Actually some of this [indiscernible]. It looks like you could do that. At our predictor plant has a [indiscernible] 25 through 28,000 feet. But the storm goes up to 45 or 50,000 feet. So really, you could do it with a higher altitude air plan. But when you are in that I, [indiscernible]. Really it is 50,000 feet. Then you see another airplane it you realize how small you are because that other airplane looks like a dog. And you realize how large the storm is that you're in, you can't comprehend that.
>> We have a question here and then up front.
>> It might be my imagination, but it appears that the storms when across the ocean, they have more of the tendency to go into the Caribbean and into the Gulf rather than making the turn and going up the east coast of Florida or at the other coast. But I remember earlier that [indiscernible] [speaker/audio faint and unclear] now it is more like Louisiana and Texas.
>> I know I literally feel like to have this big target on me. And the weather pattern, all of these [indiscernible] patterns of the Earth and that could change once again, it just depends on where the highest and where the pattern is that steers these things. There is not really a lot around the actual hurricanes. But we're making forecast for where hurricanes are going based on things that don't exist. Let me explain, we're making forecasts based on high pressure levels or a low pressure trough that is coming out of the Rockies that steers

these things. Things that are maybe three or four or five days out [indiscernible]. And to be forecasting where a hurricane [indiscernible] teen to think about and doing that with NOAA. But the high is so strong in the eclectic, you have to [indiscernible] south and it goes into the Gulf. And [indiscernible].
>> We have a question here for a questionnaire.
>> And [indiscernible] [speaker/audio faint and unclear]
>> Wellcome we have three plans that we call our team, and the jet is good for high level working. But really, where we need to be is about eight or 10 or sometimes 12,000 feet to information that the meteorologist and forecasters needed, and that is where propeller planes are much more efficient actually. The fact that there is a propeller in front of that intake because [indiscernible] engine, [speaker/audio faint and unclear] intake is bad, I just feel better. It is more efficient action for our purposes and it has the structure that can handle it. Unlike the four engines. Four engines is really nice as well.
>> A question over here?
>> I saw in your back that you do a lot of work [indiscernible] and I know he Cuba is often hit by hurricanes and [indiscernible] change information, but you have any exchange information with the Cuban government on [indiscernible] weather?
>> Actually, we do partner with the entire Caribbean and [speaker/audio faint and unclear] and from an aircraft perspective, we do have to get clearance over Cuba, typically to meet our objectives with a storm [indiscernible], and that is always a questionable thing when we have the State department involved. What we have learned to do is really talk [indiscernible] and exchange relations with them throughout the flight, because they determine in the air space where you are going and you need two talk nicely. So what we typically do is give them our latest fixed, our latest position and speeds. So they can get updated information and it is really an exchange of partnership. It is a good deal with the entire Caribbean.
>> The only thing I would add is, the NOAA -- and talk a lot about serving America, but we're serving the world. It is a very global agency, [speaker/audio faint and unclear] some of the stuff [indiscernible]. We're talking Central America, Mexico, we're talking tropical storms and so forth, and remember the big tsunami that occurred in [indiscernible]. That was an incredible [indiscernible] [indiscernible] topic for central portions of the ocean, [indiscernible] people to have half an inch clip in the middle of the ocean [indiscernible]. [speaker/audio faint and unclear]
>> We will take a couple of questions, over here, this element and this one here.
>> On the Drop Son, does it does have the potential to measure the water temperature and search and knowing the depth where it drops?
>> Will you saw from the video that water temperature is a very important aspect of the -- that fuels the hurricane, and that is actually a different instrument we use occasionally, not as much as we use the Drop Son, but what we used is an airborne expandable barometric [indiscernible]. It raises the -- measures the temperature of the water to a certain debt and we had to send that back [indiscernible] and we build that into our model. Then then surged is a different thing. And really, that search model can be predictive of when [indiscernible] is out as a category five, actually when the charges building. And [indiscernible] regardless of what propensity [indiscernible] is when. And that search is -- and that was one of those [indiscernible] points I made, when flying at very last mission on Hurricane Katrina, it was it windfall mission, at night. The storm had already -- going across land and find the southern half over water, and with that the call from air-traffic control that the city had been breached. Up until then it was fine, it was, this is hurricane Katrina it it was amazing. Then hear the levees are preached and it is heart wrenching. The story was so different. We [indiscernible] down low and [indiscernible] for me it was once again, there was not much we could do [speaker/audio faint and unclear].
>> All the more reason to be prepared.
>> Do we have anymore questions?
>> To questions. One, at any of your planes crashed? And two, what will be your next mission?
>> Great questions.
>> Well, we have lost a plane. We had that one mission where we lost an engine in the eye wall, and that was pretty heroine because they were flying much lower than we typically do today. And this has been a big learning process for us over a decade. We're flying much lower, they wanted to and it scared if the people so they know what to do this anymore. But nowadays we have an approach of going a little higher. We're always learning things and a struggle to do this right, but we did have a very state record.

>>> One of the most harrowing for me it was 1I wasn't even on, actually, but it was on a project we do in winter storms. It was in the North Pacific. It wasn't a hurricane but hurricane force winds. There were about 3,000 feet so there was no eye wall, but it was a strong store and it was taking up salt into the engines and once again, things in the engines were bad and they lost a few engines on that mission and had to restart them. But that was over the Pacific at night into the ring. It is a scary thing. So there are a few of those instances where we have gotten very safe so far and we try to continue to do that, that is our number one objective.
>> We have time for a few more questions. I have a tournament in back?
>> Do you have any videos of you you could share with us of you actually flying, either on the Web site or hear?
>> I think there is some on the websites. But NOAA.gov has a wealth of intermission and you could probably search on there. I think there are several clips. [indiscernible] a few that I have seen out there. It is kind of black, black, black and then suddenly, white. I have tried to take a video of it myself and it is hard to capture the big deal.
>> What do you do at the rest of your job when you are not flying?
>> If you saw in the Midwest, that was a springtime mission. Right now, we have aircraft out into plan and one in Alaska, and they are doing wintertime experiments. We are always feeding information not just to the weather service, we assist and support the other services at NOAA also, and if you visit the websites you will see things you were not aware of and how it actually touches your life on a daily basis. But there is the National Fisheries Service, the National [indiscernible] Service, and they have [indiscernible] responsibility. We support them with their aircraft and all of us typically fly more than an airplane, so we are busy both in the air and then we have ground jobs as well in support of their aircraft operations center that we're responsible for.
>> You keep talking about how much energy these storms give us, [speaker/audio faint and unclear]
>> Well, I showed the power of tornado with those cars. Those videos and showed earlier. And if you look at a hurricane, look at the mere size difference? let's put it this way. When a hurricane landfalls, in some instances when a hurricane makes landfall --

>>> Please pardon the interruption. Profits contains less than three participants at this time. If you would like to continue press star now. For this conference will be terminated.
>> Graphics took a little forest and you can see a hook and a spin at the end of it. Those are the small clues we are looking for [indiscernible] in the storm and that could mean a tornado [indiscernible]. It is amazing to see if the bonds and stuff like that [indiscernible] the picture of the video of the tornado --

>> Please pardon the interruption. Your conference includes less than three participants at this time. If he would like to continue, press star one now where the conference will be terminated.
>> 2500 feet per minute, I think that is a typical person parachuting is about 1,000 feet per minute. And [speaker/audio faint and unclear] but they like two time it so they get a certain amount of space. And I think that's Tom's about every [indiscernible] feet. So if it is sending any information faster, it gives us less data points, so we don't get as much data.
>> Please pardon the interruption. Your conference contains less than three participants at this time. If you like to continue, press star one now or the conference will be terminated.
>> -- most of the tornadoes were on the right hand side, and even more so, the right front. And most of them make landfall right in front of the eye, which would be at the squadron here, so that part is your highest [indiscernible] and highest wind. And if you think about it, that is where the highest searches also. And this is the most flooded and --
>> Cure conference is being terminated.
>> Captioner says: Mike, I was disconnected. Do you want me to call back in?
>>

>>> [event concluded]